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A FIELD OF THE INVENTION

1 DISPENSER FOR GLOVES MADE OF SHEET MATERIAL

A-2 BACKGROUND OF THE INVENTION

3 The invention relates to a dispenser for gloves made of
4 sheet material.

5 The invention applies to the self-service, unit-by-unit
6 dispensing of ambidextrous, single-use gloves, particularly but
7 not exclusively at sites where motor vehicle fuels are sold.

8 The term glove hereinafter designates a flexible object into
A-9 DESCRIPTION OF RELATED ART which a hand can be inserted and which comprises at least one
10 finger.

11 The invention relates to the dispensing of single-use gloves
12 which, being made of impermeable sheet material, have the
13 advantage of being able to be stacked for packaging.

A-14 SUMMARY OF THE INVENTION
15 For self-service dispensing of gloves of this type, it is
16 known for gloves to be assembled into at least one batch, and for
17 this batch to be placed in a box called a dispenser equipped with
18 a slot from which a person can remove gloves.

19 The known boxes have the drawback of allowing the removal of
20 too many gloves, that is, the malicious removal of a large
21 quantity of gloves in a single operation.

22 One object of the invention is precisely to obtain a
23 dispenser which limits the number of gloves that can be removed
24 in a single operation.

25 To this end, the subject of the invention is a dispenser of
26 the above-mentioned type constituted of sheet material, this
27 dispenser comprising a box essentially constituted by at least
28 one wall,

29 - which defines an internal volume capable of containing a
30 batch of a predetermined number of gloves (1) and houses at least
31 one so-called securing device whose function is to hold the
32 gloves of the batch in a stack from which each glove can only be
33 separated when it receives a force of predetermined intensity,
34 and

35 - in which wall is provided at least one slot through which
gloves can be extracted,

1 this dispenser being characterized in that:

2 - at least one slot of the box has a cross-section at least
3 equal to the cross-section that the batch intended to be placed
4 inside the box has in a predetermined transverse plane of a group
5 of fingers constituted by the stacking of the same fingers of the
6 gloves in a batch, so that this group of fingers can be inserted
7 into the slot at least as far as the transverse plane in
8 question,

9 - the securing device is positioned inside the box in such a
10 way that the predetermined group of fingers of the batch projects
11 through the slot to the outside of the box by a predetermined
12 length, so that each glove can only be separated from the batch
13 when the one of its fingers that is inserted into the slot
14 receives the force in a direction substantially parallel to its
15 longitudinal axis.

16 BRIEF DESCRIPTION OF THE DRAWINGS

17 The invention will be more clearly understood with the aid
18 of the following description given as a non-limiting example in
19 reference to the appended drawing, which schematically
represents:

20 - Fig. 1: ^{is,} a partial front view of a dispenser according to
21 the invention,

22 - Fig. 2: ^{is fragmentary,} a ~~view along D~~ of the dispenser in Fig. 1,

23 - Fig. 3: a front view of the dispenser with its cover
24 removed,

25 - Fig. 4: a cross-sectional view of the dispenser in Fig. 1,
26 with the open position of its cover symbolized by a fine dot-and-
27 dash line.

28 DESCRIPTION OF THE PREFERRED EMBODIMENTS

29 Please refer to the drawing, which shows gloves 1 made of
sheet material.

30 For example, the gloves 1 are ambidextrous, and are intended
31 for single use.

32 The term glove 1 hereinafter designates a flexible object
33 into which a hand (not shown) can be inserted and which comprises
34 at least one finger 1A.

35 As shown in the drawing, the gloves 1 are stacked so as to

1 constitute at least one substantially flat batch 3, placed in a
2 dispenser 4.

3 The dispenser 4 comprises a box 5 essentially constituted by
4 at least one wall 5A which defines an internal volume capable of
5 containing a batch 3 of a predetermined number of gloves 1, in
6 which wall 5A is provided at least one slot 6 through which
7 gloves 1 can be extracted by a person (not shown).

8 In the non-limiting exemplary embodiment shown, the box 5 is
9 in the form of an approximately parallelepipedic rectangular case
10 and comprises walls which extend in different planes.

11 Although it is not shown, it is understood that the box is
12 intended to be firmly attached (by means not represented) to a
13 stable support S such as a wall, a post or the like, in order to
14 have an appropriate height for its use by a person.

15 Advantageously, but in a non-limiting way, the box is made
16 of sheet metal.

17 Remarkably:

18 - at least one slot 6 of the box 5 has a cross-section at
19 least equal to the cross-section that the batch 3 intended to be
20 placed inside the box 5 has in a predetermined transverse plane T
21 of a group 1B of fingers 1A constituted by the stacking of the
22 same fingers 1A of the gloves 1 in a batch 3, so that this group
23 1B of fingers can be inserted into the slot at least as far as
24 the transverse plane T in question,

25 - the box 5 houses at least one so-called securing device 7
26 whose function is to hold the gloves 1 of the batch 3 in a stack
27 from which each glove 1 can only be separated when it receives a
28 force F of predetermined intensity in a direction substantially
29 parallel to the longitudinal axis 1C of the one of its fingers 1A
30 that is inserted into the slot 6, and

31 - this device 7 is positioned inside the box 5 in such a way
32 that the predetermined group 1B of fingers 1A of the batch 3
33 projects through the slot 6 to the outside of the box 5 by a
34 predetermined length L.

35 Preferably, the box 5 comprises only one slot 6 for the

1 removal of the gloves.

2 The length L along which the group 1B of glove fingers must
3 project outside the box, is at least long enough to allow the
4 grasping of a glove finger between the thumb and the index finger
5 of a person's hand.

6 One skilled in the art will be able to determine this length
7 L.

8 The precision with which the removal of gloves must be
9 carried out makes it possible to considerably reduce the number
10 of malicious acts involving the simultaneous removal of a
11 plurality of gloves.

12 It will be noted that in order to achieve the object of the
13 invention, the following are advantageously combined:

14 - the fact that only a fraction of the batch 3 of gloves 1
15 is accessible to the users (not shown) of the dispenser 4, which
16 makes it possible to limit the extent of the area on which an
17 action could be exerted in order to extract the entire batch 3,
18 and

19 - the need to exert on each glove 1 an action of
20 predetermined intensity in order to free it from the securing
21 device 7, which also makes it possible to limit the number of
22 gloves that can be extracted from the box 5 in a single
23 operation.

24 Adherence to these primary technical principles makes it
25 possible to construct a dispenser 4 of gloves 1 with which the
26 number of gloves 1 that can be removed in a single operation is
27 considerably reduced in relation to the dispensers of the prior
28 art.

29 One skilled in the art will be able to determine the optimal
30 value of the intensity of the action for extracting a glove 1.

31 Equally remarkably, the securing device 7 comprises at least
32 one so-called interdigital stop 8, 9 at least indirectly integral
33 with the box 5, which is:

34 - disposed so as to rest in at least one interdigital space
35 1D, 1E common to the group 1B of fingers 1A inserted into the

1 slot 6 and to a contiguous group 1F of fingers 1A, and

2 - oriented so as to assume the local support of each glove
3 of the batch whose finger running through the slot is grasped for
4 extraction, so that it acts in opposition to the displacement of
5 each glove of the batch in the direction of its extraction
6 through the slot.

7 When a pulling action is exerted on the finger of a glove
8 projecting through the slot, the glove presses against each stop
9 of the securing device, then a lateral folding of the glove
10 occurs on either side of an axis that is substantially the same
11 as the longitudinal axis of the grasped finger, making it
12 possible for the glove to be released from the interdigital stops
13 of the securing device and to be extracted through the slot 6.

14 This extraction operation works due to the flexibility of
15 the sheet material constituting the gloves.

16 The extraction of the glove constituting each of the
17 opposite sides of the batch is easy to obtain; the extraction of
18 a glove located within the batch is slightly more difficult,
19 though not impossible.

20 On the other hand, when a pulling action is exerted on a
21 plurality of glove fingers projecting through the slot, the
22 gloves press against each stop of the securing device, but the
23 lateral folding of the gloves cannot be obtained due to the fact
24 that the gloves are pressed against one another, thus preventing
25 the gloves from being released by the securing device and
26 extracted through the slot 6.

27 These technical characteristics make it possible for the
28 extraction of a plurality of gloves in a single operation to be
29 prevented, or at least largely impeded, due to the resistance to
30 the extraction produced by the securing device 7 constituted in
31 this way.

32 In a way that is equally remarkable, each slot 6, on the
33 inside of the box 5, is bordered by walls 8A, 9A which determine
34 a chute 10 having a width substantially equal to the width of the
35 finger running through the slot and a length approximately equal

1 to the fraction of the finger comprised inside the box.

2 The function of these walls 8A, 9A is to guide a group of
3 fingers of the batch of gloves toward the slot 6 during the
4 loading of a batch of gloves into the box.

5 Moreover, these walls make it possible to limit digital axis
6 to the inside of the box.

7 In effect, when several gloves have been removed in
8 succession, the thickness of the batch of gloves contained in the
9 box thus being reduced, the group of fingers of the batch
10 inserted into the slot no longer occupies its entire cross
11 section, and digital access to the inside of the box is then
12 possible.

13 These technical characteristics increase the difficulty of
14 removing a plurality of gloves in a single operation.

15 Equally remarkably, at least one of the walls 8A, 9A which
16 determine the chute 10 inside the box supports an interdigital
17 stop 8, 9 of the securing device 7.

18 Remarkably, the internal volume of the box, at least
19 locally, has a thickness E that is at least enough to allow the
20 angling of the parts of the batch of gloves which adjoin the
21 group of fingers intended to be inserted into the slot 6 but
22 which do not project through this slot 6, in order to allow the
23 positioning of the securing device 7 in the box 5 without
24 allowing the wall of the box in which the slot 6 is disposed or
25 the surrounding walls to press against the surfaces of the batch,
26 thus preventing the desired insertion of the group of fingers
27 into the slot.

28 Advantageously, when the glove has five fingers, including a
29 middle finger that is longer than the other fingers (thumb, index
30 finger, ring finger, little finger), it is the group of fingers
31 corresponding to this middle finger that projects outside the
32 box.

33 The length L of the projection formed by the group 1B of
34 fingers outside the box need not in this case be limited to the
35 difference in length between the middle finger and the other

1 fingers of the gloves constituting the batch.

2 It suffices for the manufacturer of the dispenser to
3 position the interdigital stops 8, 9 of the securing device 7
4 inside the box 5 in such a way that the predetermined group 1B of
5 fingers 1A of the batch 3 projects through the slot 6 to the
6 outside of the box 5 by the desired length L.

7 Remarkably, projecting from an external side 5B of the box
8 which adjoins the slot 6, the box 5 supports at least one
9 external ^{portion} stop 11 having a disposition and a size such that, at
10 least along the length L of the projection formed by the group 1B
11 of fingers 1A outside this box 5, the movements of a person's
12 hand for digitally grasping at least one finger 1A of a glove 1,
13 are limited:

14 - to those necessary for this digital grasping,
15 - and to those for pulling in a direction substantially
16 parallel to the longitudinal axes of the fingers 1A of the group
17 of fingers 1A which projects from the external surface 5B of the
18 box 5.

19 In one embodiment, the external ^{portion} stop 11 is constituted by a
20 plate 11 which extends in a plane approximately perpendicular to
21 the external surface 5B of the box 5 into which the slot 6 opens.

22 Advantageously, the plate 11 is comprised of an extension of
23 one of the walls 5A of the box, and for example, when the box 5
24 comprises a front wall and a back wall, this plate 11 is an
25 extension ~~of~~ of the back wall.

26 Preferably, the front wall comprises a semi-circular slot 5C
27 for the passage of the thumb of a person who grasps a glove
28 finger between the thumb and the index finger.

29 Remarkably, in addition to at least one interdigital stop,
30 the securing device 7 comprises:

31 - at least one part 12 made of flat, rigid material,
32 detachably connected at least to each of the gloves 1 of the
33 batch 3 substantially at the level of a part of the glove 1 in
34 which an opening for the insertion of a hand is provided,

35 - ^{reads 14 A, B} stops 13, 14 supported at least indirectly by the box 5

1 and by each part 12 made of flat, rigid material, which are
2 disposed on these elements 5, 12 so as to define the position of
3 each glove 1 inside the box 5 in such a way as to obtain the
4 alignment of a predetermined group 1B of fingers 1A along the
5 center axis 6A of the slot 6 as well as the precise positioning
6 of the batch 3 such that the predetermined group 1B of fingers 1A
7 of this batch 3 projects through the slot 6 to the outside of the
8 box 5 by the desired length L.

9 In the drawing, the thicknesses of the card and the gloves
10 have been considerably enlarged for purposes of illustration.

11 The fact that the batch of gloves thus appears to be
12 constituted by gloves joined with only one card must not be
13 considered to be a limitation of the invention.

14 Advantageously, the stops ~~13~~^{14A} at least indirectly supported
15 by the box 5 are comprised of rods ~~13~~^{14A} which, being arranged
16 according to a predetermined disposition, run substantially
17 perpendicular to an internal surface 5C of the box, while at
18 least some of the stops ~~13~~^{14A} supported by each card 12 include
19 ^{apertures} perforations ~~13~~^{14A} each of which is intended to receive one rod
20 and which are disposed so as to allow the engagement of each card
21 onto the rods in question.

22 Preferably, the ~~part~~^{card} 12 made of flat, rigid material is
23 comprised of a part made of cardboard on which a plurality of
24 gloves is held.

25 For example, in order to be detachably connected to a card,
26 each glove comprises a separable part which is itself anchored to
27 the card 12, for example by means of clamps (not shown).

28 Remarkably, the ~~stops~~^{rods} 14 supported at least indirectly by
29 the box 5, which are intended to cooperate with the ~~stops~~^{shoulders} 13 of
30 each card 12 so as to determine the position of the gloves inside
31 the box, are supported by a means 15 for adjusting their position
32 in at least one direction in a plane substantially parallel to a
33 center axis 6A of the slot 6. The presence of this means in the
34 dispenser makes it possible to eliminate errors in the
35 positioning of the gloves on the cards that support them.

1 In a preferred embodiment:

2 - the box 5 comprises two parts 51, 52, articulated on an
3 axis 53 substantially parallel to one edge of the wall 5A in
4 which the slot 6 is disposed, so as to define a loading opening
5 54 having an appropriate shape and size for the loading of a
6 batch of gloves,

7 - the wall 5A in which the slot 6 is disposed supports,
8 substantially within the plane of the loading opening 54,
9 deflecting elements 55 which are limited in size so as not to
10 impede the loading of a batch 3 of gloves 1, and at least large
11 enough to impede the passage of the glove fingers 1A from the
12 inside of the box to the plane of the loading opening.

13 Preferably, the box comprises a lock 56 and means for
14 ensuring its impermeability to splashes of water.

15 One skilled in the art will be able to provide these
16 dispositions without having to engage in any inventive activity.